

ANNALS OF SURGERY.

STRETCHING OF THE FACIAL NERVE. REPORT OF A NEW CASE, WITH REMARKS AND A SUMMARY OF PREVIOUSLY REPORTED CASES.¹

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CASE. *Right facial spasm for 5½ years: Resection of right infra-orbital nerve with temporary relief: Stretching of the facial nerve: Cure, with paralysis of the face, up to date of report.* (Reported by Dr. Ella S. Webb, Resident Physician at the Woman's Hospital of Philadelphia).

MRS. A. S., native of England, æt. 48, 4 ft. 7¼ inches in height, weighing 138½ lbs, and by occupation a housekeeper, was sent to Prof. Keen's clinic at the Woman's Hospital, April 1, 1886, by Dr. Wharton Sinkler, with the following history:

Family: Mother died of dropsy at the climacteric. Father died of inflammation of the stomach. Two brothers were killed in the war. One brother living but not in good health.

Personal: Had nervous trouble when she was a child. Was paralyzed, and unable to walk until she was six years old, when she was brought to this country, and the sea voyage seemed to restore the tone of her nervous system. When 12 years old was again troubled with loss of nerve power; could not hold anything in her right hand. This condition yielded to remedies in a short time.

The menstrual function was established at 16 years of age. The periods have always been accompanied by a profuse discharge, and a good deal of pain; they were always regular until about five years ago, when her nervous trouble began, since which time they recur every

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two or three weeks, accompanied by an exaggeration of the nervous twitching and pain in the head.

From the age of sixteen until five years ago had no recurrence of nervous trouble, was always healthy, except an occasional sick headache, and twice an attack of chills and fever.

Was married at eighteen years of age, and has had ten children, nine of whom are living. Six months after the birth of the youngest, now nearly six years old, she noticed a drooping of the right upper eyelid, and soon after a twitching of the under eyelid, and the eyeball was quite blood-shot. Was under treatment for some time without relief. In less than six months the entire right side of the face and the right platysma-myoid twitched constantly; the angle of the mouth was drawn down and there was constant pain in the head. Talking, eating and indeed any physical or mental effort increased the spasms. The twitching of the cheek against the teeth made it sore, and the cheek was often caught between the teeth in mastication, so that she had all the teeth in right half of the mouth removed without any good effect. She has been under Dr. Sinkler's care from July 23, 1883. Galvanism has been faithfully used as also other remedies such as conium, gelsemium, cannabis Indica, eserine, nitro-glycerine, iodide of potassium, etc., with no permanent effect. Conium had marked influence on the tic when pushed to full doses, but soon lost its effect. Quinine would relieve the pain in the head when severe. April 25, 1884, pain in the right leg began, and at times there was pain in the back of the neck and arms. February 2, 1885, she complained of twitching in the right leg.

In June, 1884, the right infra-orbital nerve was resected by Dr. T. G. Morton. About half an inch was cut out. This was followed by a cessation of all the twitching of the muscles, and the pain in the head was relieved. This relief continued a few days but by the end of six weeks all the twitching returned, and, in addition later, a twitching of the right side and leg. Dr. Sinkler now had her sent to have the nerve stretched, as we had agreed would be proper.

Physical Examination. Lungs—Vesicular murmur good. Heart—Mitral regurgitation—murmur heard at the apex and in the axillary space.

Urinalysis. Specific grav. 1028. Color, yellow-white—white deposit. React. strongly alkaline, no albumin, no sugar.

April 1, 1886. *Present State.* Entered the hospital in condition before described. The nervous twitching increased when she was addressed or when she tried to speak. Whether her face twitched during sleep could not be determined as she awakened on the slightest noise. Given an oil injection in the afternoon in preparation for the operation.

April 2, 1886. Bowels loose, did not sleep very well through

Dr. Sinkler present and assisting. At 1:10 an angular incision was made $2\frac{1}{2}$ inches long. The centre of the incision was at the apex of the mastoid process, passing upward behind the ear, and downward in a line parallel with the border of the sterno-cleido-mastoid muscle. Ligated the posterior auricular artery. The parotid was dissected and pushed forward till the prevertebral muscles and their aponeurosis were reached. A very weak current of electricity was then applied by a wet sponge to the cheek and a fine wire to various points in the wound until the nerve was found. Immediately a spasm of the facial muscles followed the application. The nerve was then laid bare. A hook was next passed under it and the nerve stretched several times from the face outward, pulling the head over to the right side. When the nerve was stretched, marked contraction of the facial muscles was seen. The force used was estimated at between four and five pounds. No more force was used because a few fibres were felt giving way when an attempt was made to lift the head. Horsehair drainage was used and four silver sutures were introduced. Complete paralysis of the facial muscles was noted after the stretching and before she had recovered from the ether. Upon recovering consciousness the patient remarked the absence of pain in the head.

Before the operation pulse 90, temperature 98.8° . After the operation pulse 82, temperature 98.6° .

A carbolyzed gauze dressing was applied and the operation was completed at 1:50 p. m. On coming out of ether she had four nervous chills. Was given a 5 gr. assafoetida suppository which quieted her. Took a dessert spoonful of milk or beef tea every twenty minutes or half hour through the afternoon. At 6 p. m. complained of severe pain in the ear, which soon passed away. At 7 p. m. vomited, otherwise retained all nourishment. Took short naps through the afternoon and evening. After operation there was complete paralysis of facial muscles. The right eyelid did not close of itself. Slept very well through the night, snoring loudly.

April 3 (1st day after operation). 6 a. m. pulse 77, temp. 99.4° . Paralysis of facial muscles not so marked as immediately after the operation. No pain in the head, but complaining of a soreness in the right side of leg, which was rubbed with liniment. Took from half an ounce to an ounce of milk every hour, with some coffee. At 1 p. m. pulse 86, temp. 100.4° . Gave 4 grs. quinine. The wound was dressed at 2:30 p. m., slight oozing was found on the dressing. At 4 p. m. pulse 96, Temp. 100.4° . Felt very comfortable all day and slept soundly all night.

April 4 (2d day). 6 a. m. pulse 85, temp. 98.6°. Took more nourishment at longer intervals. Had no pain in the ear. 4:30 p. m. pulse 81, Temp. 99°. Leg and side still painful, rubbed with liniment.

April 5 (3d day). 6 a. m. pulse 85, temp. 98.7°. Slept very well through the night, did not snore as on previous nights. Eyelid nearly closed, and facial muscles seem a little less relaxed than before. There has been no twitching of the facial muscles or platysma or leg since the operation. Sat up with bed-rest for an hour in the morning and for twenty-five minutes sat in rocking-chair in the afternoon. 4:30 p. m. pulse 80, temp. 98.6°.

April 6 (4th day). Temp. 98.4°, pulse 76. Hunyadi water for slight constipation. Out of bed. All the stitches removed this afternoon and the horseshair drainage—a few drops of sanious discharge followed. Bandage removed and adhesive plaster applied. Evening temp. 99.6°, pulse 74.

April 7 (5th day). Temp. 98.8°, pulse 73. Complained of pain behind her ear. There was a little discharge through the night. Applied a compress of absorbent cotton with iodoform sprinkled upon it.

April 8 (6th day). A. M. temp. 98.4°, p. m. 98.4°. Very little discharge.

April 9 (7th day). A. M. temp. 99.9°, pulse 73. Able to masticate. Given an enema. Bowels moved. Evening Temp. 99°.

Was taken unwell. At this period previously the twitching of the face and also of the right side and leg, as well as the pain, were always much worse. All of these are now entirely gone. Neither twitching nor pain are present anywhere.

April 10 (8th day). Discharged well.

April 27 (25th day). No twitching or pain. Still complete paralysis though the eye can be nearly closed.

[June 18, 1886, 2½ months after the operation, I can report the case still cured. The facial palsy is beginning to disappear, and the face has nearly regained its normal expression.]

I append the following electrical examination made with great care by Dr. G. Betton Massey.

"The undermentioned muscles of expression of the right side of the face were examined on the tenth day after you had operated, that is, on the 12th of April, and also on the seventeenth and twenty-fourth days after operation. A control examination was at the same time made of the sound side for comparison, and the figures found are placed in the table as the normal formula of each muscle.

Farado-contractility was found greatly weakened on the tenth day, and totally abolished on the seventeenth. The galvanic responses tabulated below were noted with great care, all errors from changes in resistance being eliminated by the use of a milliamperemeter (Barrett's). They were those produced by the minimal current strength at closure of the circuit.

It will be noted by a reference to the table that the frontalis showed the serial change indicative of reaction of degeneration in a slight degree on the seventeenth day. This remained the same on the twenty-fourth, when slight modal change, consisting of a slow wave-like contraction instead of a sharp, quick one, was noted. The orbicularis palpebrarum showed quantitative diminution of excitability on the tenth day, and serial change on the seventeenth. The levator labii superioris showed slight serial change on the tenth day, which has increased since, amounting on the twenty-fourth day to more than a complete reversal of the normal figures. This was true also of the zygomaticus major, orbicularis oris, and levator menti, in all of which increasing serial change has been found, together with great modal alteration of contraction. The lower muscles of the face show greater change than the upper.

<i>Minimal</i>	<i>Contraction at</i>		<i>Remarks.</i>
	<i>Kathodic Closure.</i>	<i>Anodic Closure.</i>	
Frontalis {	Normal	1 1-2	Slight modal change.
	10th day	1 1-2	
	17th day	1 1-2	
	24th day	1 1-2	
Orbicularis {	Normal	1	Slight modal change.
Palpebrarum {	10th day	2 1-2	
	17th day	2	
	24th day	2 1-2	
Levat. Lab. {	Normal	3	Modal change
Superioris {	10th day	2 1-2	
	17th day	2	
	24th day	1 1-2	
Zygomaticus {	Normal	3	Modal change. Great Modal change.
Major {	10th day	3	
	17th day	3 1-2	
	24th day	1 1-2	
Orbicularis {	Normal	3	Slight modal change. Great modal change. Great modal change.
Oris {	10th day	3	
	17th day	1 1-2	
	24th day	1 1-2	
Levator {	Normal	3	Great modal change. Great modal change.
Menti {	10th day	3	
	17th day	1 1-2	
	24th day	1 1-2	

The subsequent history, with the later electrical changes, I shall report at future meeting of the Association.

REMARKS. The operation of nerve stretching was first introduced by Billroth and Nussbaum in 1872. It has been done only twenty-one times upon the facial nerve so far as I have been able to ascertain. Five of these cases have been done in America (Putnam two, Gray two. My own is the fifth.) Of these 21 cases I append the following summary ;

TABLE OF THE RECORDED CASES OF STRETCHING OF THE FACIAL NERVE.

Reporter Method.	Reference.	Date.	Sex, Age and Side.	Duration of Disease.	Supposed Cause.	Temporary Result.	Final Result.	Remarks.
Baum. (Baum's method.)	Berlin. Klin. Woch. 1879. No. 40. p. 995.	July 20, 1879.	F	L 6 years.	Epileptic fit.	Paralysis disappeared in 12 hours, cure for 8 months. Slight return after 8 months, another later. After 2 years so nearly well as not to need a second operation.	Great improvement 2 years after operation.	Right side occasionally twitched.
Bernhardt operated (Baum's method).	Zeilchr. f. Klin. Med. 1881. p. 96.	Nov. (15.) 1878.	M 36	R 5 years.	?	No paralysis resulted: twitching returned next day. After 2 years all in all some improvement, when free for hours, at which times sudden movements do arouse the spasms. Improvement not sufficient to encourage him to undergo a second operation.	Some improvement 2 years after operation.	Pain preceded the spasms for 2 years. No electrical difference on two sides.
Schüssler. (Baum's method).	Berlin. Klin. Woch. 1879. No. 46. p. 684 and Godlee's table, in Tr. Clin. Soc. XVI p. 227.	Jan. 23, 1879.	F 39	L 3 years.	?	Paralysis for 6 weeks disappearing at 12 weeks. Slight return after 6 mos. and growing worse, but in nothing like the previous severity.	Some improvement 3 months after operation.	
Eulenberg. (Hueter operated, Hueter's method).	Centralbl. f. Neurologik. No. 7. 1880, and Godlee's table	Dec. 7, 1879.	F 27	L 2 years.	?	Paralysis for 3 months, then slowly disappeared and as it disappeared the twitches returned but never so violent as before.	Some improvement 3 years and 2 months after operation.	Chiefly sudden and severe biphasic spasm extending to left side of face and slightly to right side, also to some spinal flexors of muscles of fingers. Schi-mmer had stretched and divided left supra-orbital nerve without result. Pos-

Putnam. (Baum's method.)	Archives of April 24, 1886. Med. N. Y. Feb. 1887.	M. 25.	R. 3 years.			ter. auric. nerve not paralysed by Hueber's operation. Reaction of degeneration followed the operation. Loss of taste in left ant. half of tongue for fifteen weeks.
Bernhart. (Langenbeck operated Hueber's method.)	Zeitschr. klin. June 18, 1886. Med. 1887, p. 99.	M. 21.	L. 4 years.	Cold.		Paralysis disappeared after 3 months. Spasm returned after nearly a year. Operation.
						Unrelieved. Renc. of degeneration. On the day when first examined electrically, but this disappeared after 9 months.
						Complete paralysis 3 days. Somewhat relieved 4 mos. as the paralysis was the lesser evil. Renc. of degeneration. Only branches to eye and upper face stretched.
Surge and Godlee. (Godlee's method.)	Tr. Clin. Soc. July 20, 1886. Lancet, 1887, p. 229.	F. 72.	R. 6 years.	Mental shock.		Paralysis nearly disappearing after 3 months. Slight unconscious twitching after 3 months. At end of 9 mos. following severe emotional disturbance entire return.
Southam. (Baum's method.)	Lancet, Aug. 27, March 28, 1887. Apr. 10, 1886.	F. 50.	L. 2 years.	Fright.		Paralysis disappeared at 16 weeks. Cure after five years.
Loffmann.	Bernhardt March 28, 1887. Deutsch Med. Woch. 1887, No. 9, and Godlee's table.	F. 35.	R.			Paralysis lasted to some extent till the fall of 1887. At this time while she was pregnant and after delivery spasms were worse, but then subsided (entirely?)